STATEMENT OF LEGAL AND FACTUAL BASIS

Custom Wood Products, LLC – Aerial Way Plant
3304 Aerial Way Drive
Roanoke, Virginia
Permit No. WCRO-21390

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Custom Wood Products has applied for a renewal of the Title V Operating Permit for its facility. The Department has reviewed the application and has prepared a Title V Operating Permit.

Engineer/Permit Contact: Date: July 27, 2007

Air Permit Manager:

FACILITY INFORMATION

Permittee
Custom Wood Products, LLC
3304 Aerial Way Drive
Roanoke, VA 24018

Facility
Custom Wood Products, LLC
3304 Aerial Way Drive
Roanoke, VA 24018

County/Plant ID No. 51-770-0254

SOURCE DESCRIPTION

SIC Code: 2434 NAICS Code: 337110

Custom Wood Products, LLC (CWP) owns and operates a wood cabinet manufacturing and coating facility at 3304 Aerial Way Drive in Roanoke, Virginia. CWP produces only custom cabinets that are designed to meet customer specifications.

The Aerial Way plant currently operates with an annual production rate of approximately 27,000 cabinets per year, while working a single 8-hour shift, with the potential to increase production to 81,000 cabinets per year, while working three 8-hour shifts per day. The plant receives pre-cut boarding and stores these wood pieces on-site for custom processing. Select pieces are then cut, shaped and assembled to meet customer specifications in the building, door, and/or framing woodworking departments.

Each piece of woodworking equipment is either vented to an indoor dust collector or vented to the Aerial Way plant's main baghouse to control wood dust emissions.

Once the various cabinet components have been cut, shaped and assembled to specifications, they are sent to the coating booths to apply tints, stains, basecoats, and/or topcoats. Coatings are applied using a combination of high volume low-pressure (HVLP) spray guns that operate at air pressures below 10 psi and air-assisted airless spray guns. The Aerial Way plant has been modified during the past permit period to have twelve (12) coating and application booths, from the ten (10) at original permit issuance in September 2002. Eleven of the twelve coating booths currently contain filters that collect particulate matter emissions generated from the coating overspray.

As part of the now complete compliance plan submitted with the 2002 Title V application in response to a consent order and agreement, CWP agreed to convert some of their existing HVLP spray systems to air-assisted airless spray systems because of the improved transfer efficiency. As part of the compliance plan, CWP also replaced an existing unfiltered blow-off booth with a new self-contained unit and replaced the existing plant compressor with a new, more energy efficient model.

In addition to particulate matter emissions from coating operations, the Aerial Way Plant emits volatile organic compound (VOC) and Hazardous Air Pollutant (HAP) emissions, for which the plant is considered a major source. Individual HAPs include Toluene, Xylene, Methyl Isobutyl Ketone (MIBK), Methanol, Ethylbenzene, Glycol Ethers, Formaldehyde, Napthalene, Dimethyl Phthalate, and Hexane.

The Maximum Achievable Control Technology (MACT) standard for wood furniture plants (40 CFR 63 Subpart JJ) applies to the finishing operations portion of the facility as an existing source before the December 7, 1995 MACT applicability date. The plant's primary method for meeting the federal standard is to normally use only compliant coatings, where required. This facility is not a PSD definition major source due to VOC PTE emissions remaining below 250 tons/yr. It is located in an area currently regarded as in attainment for all pollutants.

Significant portions of this facility pre-date the Clean Air Act. New Source Review permits for modifications to some operations were issued on August 28, 2002 and May 23, 2006. These permits added two new spray booths and made three existing booths subject to new source rules because of relocation. The federal operating was reopened for the changes from the first NSR permit, the changes from the second permit are incorporated in this renewal.

The application for renewal of this federal operating permit was received on March 2, 2007 and was deemed timely and administratively complete. Due to scheduling delays caused by other projects with strict timetables, renewal of this permit was delayed past the original expiration date. Operations continued under the permit shield and the terms of the most recent modification of the expired permit.

COMPLIANCE STATUS

The facility is inspected at least once in each two-year period. The facility is in compliance with the State Air Pollution Control Board regulations.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emission units are grouped as follows:

Fuel Burning Equipment	All fuel burning equipment at this facility is classified as insignificant emission units..
Manufacturing Equipment	A brief description of each operational unit follows. The emission and control details appear in the table.

Woodworking operations: Cabinet components are cut, shaped and assembled. Wood-working is divided into three sections: The Door Department, the Framing Department, and the Building Department.

Finishing Operations: Tints, stains, basecoats and top coats are applied in various finishing booths.

Emission Units

Equipment to be operated consists of:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Woodworking Equipment							
ES-DD	SNBH1	Woodworking – Door Department	120 cabinets/shift	Baghouse	CDBH1	PM, PM_{10}	N/A
ES-FD	SNBH1	Woodworking – Framing Department	120 cabinets/shift	Baghouse	CDBH1	PM, PM_{10}	N/A
ES-BD	SNBH1	Woodworking – Building Department	120 cabinets/shift	Baghouse	CDBH1	PM, PM_{10}	N/A
Finishing Equipment (MACT JJ subject)							
ES220A	SN220A	Devilbis 7'8"x12' Wipe/Stain Booth	120 cabinets/shift	Dry filter	CD220A	PM, PM_{10}	N/A**
ES221B	SN221B	Custom Built 8'x12' Blowoff/Tint Booth	120 cabinets/shift	none			N/A**
ES222C	SN2221	Custom Built 7'6"x16' Basecoat/Stain Booth	120 cabinets/shift	Dry filter	CD222C	PM, PM_{10}	8/28/02
ES223	SN223	Binks 9'x15'Basecoat Booth	120 cabinets/shift	Dry filter	CD223	PM, PM_{10}	N/A**
ES225	SN225	Greenline 7'6"x20 Topcoat/Basecoat Booth	120 cabinets/shift	Dry filter	CD225	PM, PM_{10}	N/A**
ES227	SN227	Devilbis 7'6"x12' Topcoat Booth	120 cabinets/shift	Dry filter	CD227	PM, PM_{10}	N/A**
ES228	SN228	Devilbis 7'6"x12' Topcoat Booth	120 cabinets/shift	Dry filter	CD228	PM, PM_{10}	N/A**
ES229	SN2294	Devilbis 7'6"x12' Topcoat Booth	120 cabinets/shift	Dry filter	CD229	PM, PM_{10}	N/A**
ES230	SN230	Devilbis 7'6"x12' Topcoat/Basecoat Booth	120 cabinets/shift	Dry filter	CD230	PM, PM_{10}	5/23/06
ES231	SN231	Devilbis 7'6"x12' Topcoat/Basecoat Booth	120 cabinets/shift	Dry filter	CD231	PM, PM_{10}	5/23/06
ES232	SN232	Custom Built 7'6"x10' Touch-Up Booth	120 cabinets/shift	Dry filter	CD232	PM, PM_{10}	8/28/02
ES233	SN233	Custom Built 7'6"x14' Topcoat/Basecoat Booth	120 cabinets/shift	Dry filter	CD233	PM, PM_{10}	5/23/06

*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

** Booths not included in NSR permits remain subject to standards of MACT JJ

EMISSIONS INVENTORY

Emissions inventory from 2006, the most recent year.

The emissions from the 2006 calendar year are summarized below:

Total VOC Emissions:	46.07 tons
Total NOx Emissions:	2.38 tons
Total SO2 Emissions:	0.14 tons
Total CO Emissions:	2.00 tons
Total PM-10 Emissions:	7.64 tons

Significant HAP Emissions

Xylenes:	3.44 tons
Toluene:	1.68 tons
Methanol:	0.31 tons
Ethylbenzene:	0.19 tons
Methyl Isobutyl Ketone:	0.17 tons

EMISSION UNIT APPLICABLE REQUIREMENTS

New Source Review Permit Requirements

The underlying NSR permit dated August 28, 2002 sets conditions related to the addition of a new spray booth and the relocation of an existing spray booth. A copy of this permit is attached as Appendix B. The conditions of the federal operating permit and the corresponding conditions of the NSR permit are displayed in the table below. A condition noted as B-X refers to condition X of the August 28, 2002 permit.

The underlying NSR permit dated May 23, 2006 sets conditions related to the addition of a new spray booth and the relocation of two existing spray booths. A copy of this permit is attached as Appendix D. The conditions of the federal operating permit and the corresponding conditions of the NSR permit are displayed in the table below. A condition noted as D-X refers to condition X of the May 23, 2006 permit.

Title V Condition	NSR Condition	Description	VAC Applicable Requirement
V-A-1	B-3	Filters for control ES222C & ES232	9 VAC 5-50-260
V-A-2	D-2	Filters required: ES230, ES231, & ES233	9 VAC 5-20-260
V-A-3	D-3	Filter control efficiency: ES230, ES231, & ES233	9 VAC 5-20-260
V-A-4	B-5, D-5	VOC work practice standards	9 VAC 5-50-20
V-A-5	B-6	Emission limits ES222C & ES232	9 VAC 5-50-260, 9 VAC 5-50-180
V-A-6	D-8	Emission limits: ES230, ES231, & ES233	9 VAC 5-50-260
V-A-7	B-7	Opacity limit for ES222C & ES232	9 VAC 5-50-260
V-A-8	D-9	Opacity limit: ES230, ES231, & ES233	9 VAC 5-50-260
V-A-9	B-18, D-16	Maintenance & operation practice	9 VAC 5-50-20, 9 VAC 5-50-50
V-B-1	B-4	Filter monitoring: ES222C & ES232	9 VAC 5-50-50
V-B-2	D-4	Filter monitoring: ES230, ES231, & ES233	9 VAC 5-50-50
V-C-1	B-9a	Consumption records ES222C & ES232	9 VAC 5-50-50
V-C-2	D-12a	Consumption records ES230, ES231, & ES233	9 VAC 5-50-50
V-C-3	B-9d, D-12b	Logs for filter inspection/maintenance	9 VAC 5-50-50
V-C-4	B-9b, D-12c	MSDS sheets	9 VAC 5-50-50
V-C-5	B-9c, D-12d	Emissions from new/modified booths	9 VAC 5-50-50
V-C-7	B-11a, D-12e	Records of stack tests & VEEs	9 VAC 5-50-50
V-C-8	B-9e, D-12f	Records of maintenance & training	9 VAC 5-50-50
V-D-1	D-6	Testing & monitoring ports	9 VAC 5-50-30
V-D-2	D-10	Stack tests on request: ES230, ES231, & ES233	9 VAC 5-50-30
V-D-3	B-10, D-11	VEEs on request: new/modified booths	9 VAC 5-50-30
VII-A-1	B-17, D-19	Violation of Ambient Air Quality Standard	9 VAC 5-20-180, 9 VAC 5-80-1180
VII-A-2	B-8, D-7	Requirement by reference MACT JJ	9 VAC 5-60-90, 9 VAC 5-60-100
VII-B-1	D-17	Record of malfunctions	9 VAC 5-20-180, 9 VAC 5-80-1180
VII-C-1	B-13	Notice of control equipment maintenance	9 VAC 5-20-180
VII-C-2	B-14, D-18	Malfunction notification	9 VAC 5-20-180

Periodic Monitoring

The permit content requirements of the regulations for federal operating permits, 9 VAC 5-80-110, state that the permit should include conditions for periodic monitoring sufficient to demonstrate that the facility is in compliance with the limits of the permit. The record keeping requirements are deemed sufficient to determine compliance with the emission limits for VOCs. Record keeping and compliance with opacity limits is considered sufficient to demonstrate compliance with the emission limits for PM and PM-10. No opacity is expected to be observed under normal operation of the equipment. Under these conditions, a weekly modified Method 22 evaluation with requirement for Method 9 evaluation if opacity is observed is deemed sufficient to satisfy the periodic monitoring requirement.

Condition III-B-2 requires Method 22 evaluation of the woodworking baghouse and, if opacity is observed, documentation of corrective action or a Method 9 evaluation to show the opacity is within permit limits.

Condition III-C-2 requires that records of the periodic monitoring results under Condition IIIV-B-2 be maintained.

Condition IV-B-1 requires Method 22 evaluation of the existing spray booths and, if opacity is observed, documentation of corrective action or a Method 9 evaluation to show the opacity is within permit limits.

Condition IV-C-1 requires that records of the periodic monitoring results under Condition IV-B-1 be maintained.

Condition V-B-3 requires Method 22 evaluation of the new and modified spray booths and, if opacity is observed, documentation of corrective action or a Method 9 evaluation to show the opacity is within permit limits.

Condition V-C-6 requires that records of the periodic monitoring results under Condition V-B-3 be maintained.

MACT JJ Compliance

The facility as a major HAPs source is subject to the provisions of MACT JJ. The specifics of the MACT are presented in detail in Section VI (Facility Wide Conditions – MACT JJ Specific Requirements) because the requirement by reference conditions for compliance with this MACT were believed to be insufficiently specific to insure full compliance with these requirements under terms of the federal operating permit.

Standards for Existing Equipment

The woodworking operation is a combination of existing and new equipment controlled by a central control system that was an existing source prior to the Clean Air Act (CAA). Seven of the spray booths were existing sources on enactment of the CAA and have not undergone any subsequent modification. Various existing source requirements apply to these emissions units. Specific requirements are described below:

Minimum stands for proper maintenance and operating procedures for existing emissions units is authorized under 9 VAC 5-40-20E and record keeping necessary to make those requirements practically enforceable is authorized under 9 VAC 5-40-50. Conditions III-A-4, III-C-3, and III-C-5 apply these standards to the woodworking operation. Conditions IV-A-3 and IV-C-2, and IV-C-4 apply these standards to existing source spray booths.

Virginia's Existing Source Rule 17 sets minimum standards for air emissions from existing woodworking operations. Minimum capture and control requirements are set by section 9 VAC 5-40-2270.A and maximum emission limits are set by section 9 VAC 5-40-2270.B. Conditions III-C-1 and III-C-2 implement the standards. Conditions III-B-1, III-C-1, and III-C-4 require the appropriate monitoring and record keeping to make these limitations enforceable as a practical matter.

Opacity standards were set as opacity for new sources for the woodworking section based on both replacement (new) and existing equipment on an existing source central control system. Condition III-A-3 sets this standard. Opacity was set for existing sources on the existing source spray booths in the finishing section. Condition IV-A-2 sets this standard.

Voluntary Controls

Six of the seven existing source finishing spray booths operate with dry filters for particulate control. These are not required for the booths under Existing Source regulations, however the facility uses the controlled emission factors in the calculation of emission inventories. As long as the facility is taking credit on emission estimates for these controls, the controls will required to be referenced as in use in the operating permit (Condition IV-A-1) and records of inspections will be required (Condition IV-C-3).

Workplace Standards

Regulation 9 VAC 5-40-20.F requires workplace standards for the disposal of volatile organic compounds from existing sources. This requirement is included for the existing source spray booths as Condition IV-A-4.

Excluded NSR Requirements

Four conditions from the NSR permits were not included for reasons specified below:

NSR issued August 28, 2002 Condition 12 and NSR issued May 23, 2006 Condition 13: Periodic progress notifications for stage of modification. The notifications were submitted as required. The requirement is obsolete.

NSR issued August 28, 2002 Condition 15 and NSR issued May 23, 2006 Condition 14: Permit invalidation condition requiring a new permit if construction is discontinued for 18 months or not completed in a reasonable time. The project was not discontinued and completed in a reasonable time. The requirement is obsolete.

COMPLIANCE ASSURANCE MONITORING

The facility has only one major control device, a baghouse. The source submitted calculations demonstrating that the potential uncontrolled PM emission from the baghouse was 72.98 tons per year, less than the 100 tons per year that require a compliance assurance monitoring plan. The agency reviewed the calculation and finds the calculation method of estimating wood waste generated by each cut to be reasonable in the absence of official AP-42 emission factors for woodworking. In addition, the estimate is for total PM and PM-10 is the regulated pollutant. PM-10 for woodworking is generally only 40-50% of total PM for operations other than fine sanding.

The facility has eleven dry filters. Based on the uncontrolled PM at plant capacity being evenly divided between booths, each booth has a potential of less than five tons per year.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions, including those caused by upsets, within one business day.

STATE-ONLY APPLICABLE REQUIREMENTS

The following Virginia Administrative Codes have specific requirements only enforceable by the State:

Odorous Emissions	9 VAC 5-50-310
Toxic Pollutants	9 VAC 5-50-320

The permittee has no requirements designated as “state-only” in either NSR permit.

FUTURE APPLICABLE REQUIREMENTS

This facility is a major source of hazardous air pollutants. It is subject to MACT JJ for Wood Furniture Manufacturing. No promulgated or proposed MACT or NSPS regulations appear to apply to the facility at the time of renewal of this federal operating permit.

INSIGNIFICANT EMISSION UNITS

The following emission units at the facility are identified in the application as insignificant emission units under 9 VAC 5-80-720:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (5-80-720 C)
ES224	Blow-Off Tack Booth	9 VAC 5-80-720 B	PM, PM_{10}, VOC	120 cabinets/shift
IA233	22 HVAC/Air Make-up units fired with natural gas	9 VAC 5-80-720 B	PM, PM_{10}, VOC	120 cabinets/shift
NG-Insig	22 HVAC/Air Make-up units fired with natural gas	9 VAC 5-80-720 C	PM, PM_{10}, CO, NOx, VOC	Less than 10 MMBtu/hr each

These insignificant emission units are presumed to be in compliance with all requirements of the federal Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping, or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

CONFIDENTIAL INFORMATION

No information contained in the permit application or in the specific records required by the permit is considered confidential.

PUBLIC PARTICIPATION

A public notice regarding the draft permit was printed in the November 18, 2007 edition of the *Roanoke Times*. Public comments were accepted from November 18, 2007 through December 19, 2007. No public comments were received. USEPA reviewed this permit with concurrent processing as draft and proposed. The final day for USEPA comments was January 3, 2008. No comments were received from USEPA.

APPENDIX A: NSR/FOP CORRESPONDENCE TABLE

The following table is a modification of the table in the section Emission Unit Applicable Requirements – New Source Review Permit Requirements. This table is ordered corresponding to the August 28, 2002 NSR permit conditions as an aid to reference the corresponding federal operating permit conditions. The NSR permit follows in Appendix B.

NSR Condition	Title V Condition	Description	VAC Applicable Requirement
3	V-A-1	Filters for control ES222C & ES232	9 VAC 5-50-260
4	V-B-1	Filter monitoring/maintenance	9 VAC 5-50-50, 9 VAC 5-80-850
5	V-A-4	Fugitive emissions	9 VAC 5-50-260, 9 VAC 5-50-90
6	V-A-5	Emission limits ES222C & ES232	9 VAC 5-50-260, 9 VAC 5-50-180
7	V-A-7	Opacity limit for ES222C & ES232	9 VAC 5-50-260
8	VII-A-2	Requirement by reference MACT JJ	9 VAC 5-60-90, 9 VAC 5-60-100
9a	V-C-1	Consumption records ES222C & ES232	9 VAC 5-50-50
9b	V-C-4	MSDS sheets	9 VAC 5-50-50
9c	V-C-5	Record of emissions	9 VAC 5-50-50
9d	V-C-3	Logs for overspray filters	9 VAC 5-50-50
9e	V-C-7	Records of maintenance & training	9 VAC 5-50-50
10	V-D-3	VEEs on request for opacity from spray booths	9 VAC 5-50-30
11a	V-C-6	Records of stack tests & VEEs	9 VAC 5-50-50
12	N/A	Obsolete condition on progress notification	
13	VII-C-1	Notice of control equipment maintenance	9 VAC 5-20-180
14	VII-C-2	Malfunction notification	9 VAC 5-20-180
15	N/A	Obsolete condition on timely completion	
16	XI-Q	Right of entry	9 VAC 5-170-130
17	VII-A-1	Violation of Ambient Air Quality Standard	9 VAC 5-20-180
18	V-A-9	Maintenance & operation practice	9 VAC 5-50-20
19	XI -V	Permit suspension/revocation	9 VAC 5-80-10
20	XI -T	Change of ownership	9 VAC 5-80-10
21	XI -L	Registration/update	9 VAC 5-170-60, 9 VAC 5-20-160
22	XI -S	Permit Copy	9 VAC 5-170-160

APPENDIX B: NSR PERMIT DATED August 28, 2002

The permit, with its own page numbering, follows.

APPENDIX C: NSR/FOP CORRESPONDENCE TABLE

The following table is a modification of the table in the section Emission Unit Applicable Requirements – New Source Review Permit Requirements. This table is ordered corresponding to the May 23, 2006 NSR permit conditions as an aid to reference the corresponding federal operating permit conditions. The NSR permit follows in Appendix D.

NSR Condition	Title V Condition	Description	VAC Applicable Requirement
2	V-A-2	Filters required: ES230, ES231, & ES233	9 VAC 5-20-260
3	V-A-3	Filter control efficiency: ES230, ES231, & ES233	9 VAC 5-20-260
4	V-B-2	Filter monitoring: ES230, ES231, & ES233	9 VAC 5-50-50
5	V-A-4	VOC work practice standards	9 VAC 5-50-20
6	V-D-1	Testing & monitoring ports	9 VAC 5-50-30
7	VII-A-2	Requirement by reference MACT JJ	9 VAC 5-60-90, 9 VAC 5-60-100
8	V-A-6	Emission limits: ES230, ES231, & ES233	9 VAC 5-50-260
9	V-A-8	Opacity limit: ES230, ES231, & ES233	9 VAC 5-50-260
10	V-D-2	Stack tests on request: ES230, ES231, & ES233	9 VAC 5-50-30
11	V-D-3	VEEs on request: ES230, ES231, & ES233	9 VAC 5-50-30
12a	V-C-2	Annual consumption of coatings used in ES230, ES231, & ES233	9 VAC 5-50-50
12b	V-C-3	Operation, maintenance & replacement logs of filters on ES230, ES231, & ES233	9 VAC 5-50-50
12c	V-C-4	MSDS sheets	9 VAC 5-50-50
12d	V-C-5	Emissions from ES230, ES231, & ES233	9 VAC 5-50-50
12e	V-C-6	Records of stack tests & VEEs	9 VAC 5-50-50
12f	V-C-7	Records of maintenance & training	9 VAC 5-50-50
13	N/A	Obsolete condition on progress notification	
14	N/A	Obsolete condition on timely completion	
15	XI -Q	Right of entry	9 VAC 5-170-130
16	V-A-9	Maintenance & operation practice	9 VAC 5-50-20
17	VII-B-1	Record of malfunctions	9 VAC 5-20-180, 9 VAC 5-80-1180
18	VII-C-2	Malfunction causing exceedence notice	9 VAC 5-20-180, 9 VAC 5-80-1180
19	VII-A-1	Violation of Ambient Air Quality Standard	9 VAC 5-20-180, 9 VAC 5-80-1180
20	XI -V	Permit suspension/revocation	9 VAC 5-80-1210
21	XI -T	Change of ownership	9 VAC 5-80-1240
22	XI -S	Permit Copy	9 VAC 5-170-160

APPENDIX D: NSR PERMIT DATED May 23, 2006

The permit, with its own page numbering, follows.